

Geotechnical Engineer

Every building, bridge and dam sits on soil. You are the one who decides whether the soil can take it.

TYPICAL PAY

\$100,840

a year, full time

PAY RANGE

\$68k to \$163k

starting to experienced

TIME TO QUALIFY

4 to 8 years

after high school

DEMAND

Good

job outlook

LICENCE NEEDED

Yes

regulated job

WHERE YOU WORK

Consulting offices, drill rigs and test pits, construction sites, trans...

How you get there

- 1 High school** Grades 11 and 12
 Calculus, physics and chemistry. Take drafting or computer-aided design if your school offers it.
- 2 Bachelor's degree in civil engineering** 4 years
 Accredited by ABET (the Accreditation Board for Engineering and Technology). Soil mechanics and foundation design are usually third and fourth year courses.
- 3 Fundamentals of Engineering exam** Final year
 Six-hour computer-based test, normally taken in your final year. Passing makes you an engineer in training.
- 4 Master's degree** 1 to 2 years
 One to two years focused on soil and rock. Not legally required, but most geotechnical engineers have one and many firms expect it.
- 5 Experience, then the license** 4 years
 Four years working under a licensed engineer, then sit the Civil: Geotechnical paper of the Principles and Practice exam and apply to your state board.

Pros and cons

- + A four-year degree that pays close to \$70,000 in year one almost anywhere
- + A real mix of office and field work
- + The license is a clear, earnable step up in pay
- Most firms expect a master's degree, so it is really five or six years
- The ground is never fully known and you carry the risk of being wrong
- Field days in mud, heat and cold, sometimes far from home

Optional boosts

Professional engineer license. Numerical modeling. Earthquake engineering. Ground improvement.

Where these numbers come from

My Next Move: Civil Engineers (17-2051.00)

NCEES: Fundamentals of Engineering exam

NCEES: Principles and Practice of Engineering exam

ABET: accreditation

Numbers checked September 2026. Pay figures are typical full-time annual amounts in United States dollars, based on Bureau of Labor Statistics wage data and published pay scales. They vary by state, employer and experience. Tuition is for in-state students at public schools unless the card says otherwise. Sources, links and the click-through version: <https://career.help/us/careers/geotechnical-engineer>

Good to know

The most famous building in the field is a mistake

The Leaning Tower of Pisa tilts because it was built on soft ground that settled unevenly on one side. It is a geotechnical failure that became a tourist attraction, and engineers spent the 1990s stabilizin...

Soil strength is measured by counting hammer blows

One of the oldest field tests still in daily use drops a heavy weight onto a sampler and counts how many blows it takes to drive it a set distance into the ground. The count goes straight into foundation de...



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